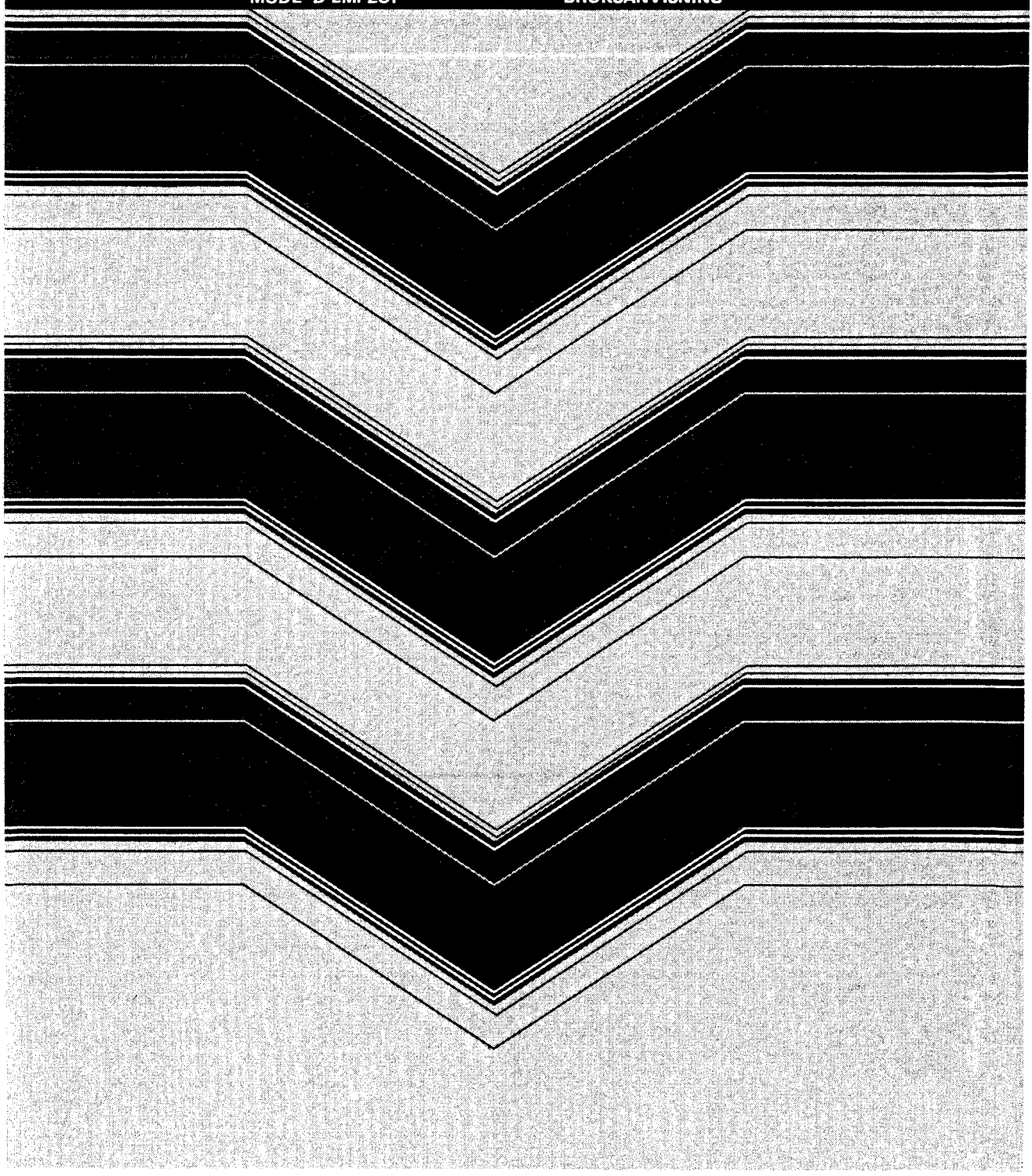
SHARP®

ELECTRONIC PRINTING/DISPLAY CALCULATOR WITH INTERCHANGEABLE CARTRIDGES
ELEKTRONISCHER RECHNER MIT ANZEIGE/DRUCKWERK UND AUSTAUSCHBAREN KASSETTEN
CALCULATRICE IMPRIMANTE/AFFICHAGE ELECTRONIQUE AVEC CASSETTES INTERCHANGEABLES
CALCULADORA ELECTRONICA CON IMPRESORA/VISOR Y CARTUCHOS INTERCAMBIABLES
CALCOLATRICE ELETTRONICA CON STAMPANTE/DISPLAY CON CARTUCCIA INTERCAMBIABILE
ELEKTRONISK RÄKNARE MED UTSKRIFT/DISPLAY OCH UTBYTBARA KASSETTER

MODEL
MODELL
MODELE
MODELO
MODELLO
MODELL

COMPET ZL-6500

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUAL DE MANEJO
MANUALE DI ISTRUZIONI
BRUKSANVISNING



INTRODUCTION

Thank you for your purchase of the SHARP electronic printing/display calculator with interchangeable cartridges, model ZL-6500.
This machine is designed for economical invoicing, banking, statistical work and a host of other special applications. And when the extra-special features of the ZL-6500 are not needed, it's still a full featured 14-digit calculator with printer and display. Careful reading of this manual and the cartridge reference manual (not enclosed) will enable you to use your new SHARP calculator to its fullest capability.

OPERATIONAL NOTES

To insure trouble-free operation of your SHARP calculator, we recommend the following:

1. The calculator should be kept in areas free from extreme temperature changes, moisture, and dust.
2. A soft, dry cloth should be used to clean the calculator. Do not use solvents or a wet cloth.
3. The power switch is marked with two internationally agreed symbols "I" and "⏻".
   With the switch in position "I" the machine is put into full operation.
   With the switch in position "⏻" the machine is in "stand-by" condition.
   When not in use, pull the mains plug out of the wall socket.
4. If service should be required on this equipment, use only a SHARP servicing dealer, a SHARP approved service facility or SHARP repair service where available.

ENGLISH

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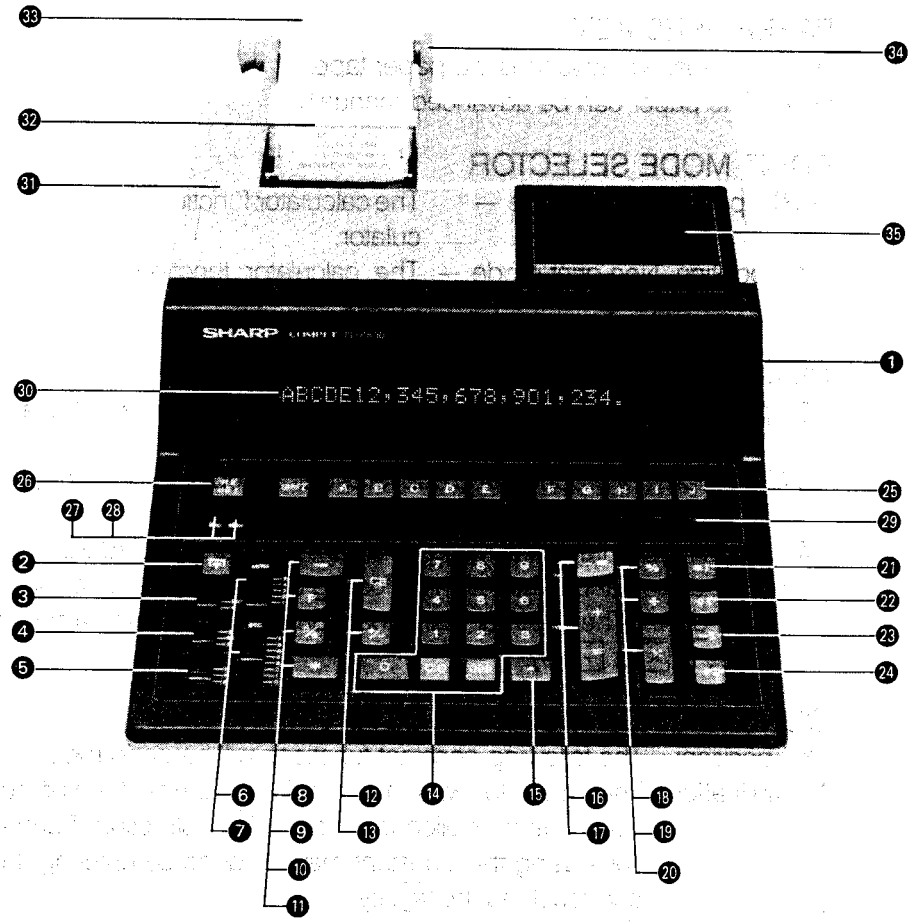
1 FEATURES

THE KEYBOARD



1. Power switch
2. Paper feed key
3. Print mode selector
4. Rounding selector
5. Constant/add mode selector
6. Application mode selector
7. Decimal selector
8. Right shift key
9. Print key
10. Non-add/sub-total key
11. Total key
12. Clear entry key
13. Change sign key
14. Numeral keys
15. Decimal point key
16. Minus equals key
17. Plus equals key
18. Percent key
19. Division key
20. Multiplication key
21. Total memory key
22. Sub-total memory key
23. Memory minus key
24. Memory plus key
25. Definable keys
26. Re-set key
27. Program lamp
28. Memory lamp
29. Lamps for definable keys
30. Display
31. Printer cover
32. Paper cutter
33. Roll of paper
34. Paper holder
35. Cartridge compartment cover

ENGLISH

OPERATING CONTROLS

⏻ ■ ■ ON | POWER SWITCH

When the power switch is turned on, the calculator is ready for operation.

PAPER FEED KEY

When depressed, advances the paper tape.
Note: The paper can be advanced manually.

PRINT MODE SELECTOR

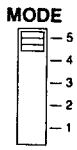
"PRT" position: Print mode — The calculator functions as a print/display calculator.
"•" position: Non-print mode — The calculator functions as a display calculator.

ROUNDING SELECTOR

"↑" position: All products and quotients that are obtained with the [±], [-=], [%], [-I] or [+I] key are automatically rounded up.
"5/4" position: All products and quotients that are obtained with the [±], [-=], [%], [-I] or [+I] key are automatically rounded off.
"↓" position: All figures beyond decimal setting are discarded.
Note: In addition and subtraction or floating decimal mode, an answer is rounded down. The decimal point floats during successive calculation by the use of [×] or [÷] key.

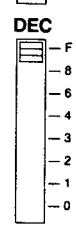
CONSTANT/ADD MODE SELECTOR

"K" position: The following constant functions will be performed:
Multiplication: The calculator will automatically remember the first number entered (the multiplicand) and the [×] instruction. Further calculations using this constant may be done by entering the variable and touching the [±] key.
Division: The calculator will automatically remember the second number entered (the divisor) and the [÷] instruction. Further calculations using this constant may be done by entering the variable and touching the [±] key.
"•" position: Neutral.
"A" position: The decimal point in addition and subtraction entries is automatically positioned according to the decimal selector setting. (See page 8).



APPLICATION MODE SELECTOR

Please refer to the cartridge reference manual.



DECIMAL SELECTOR

Presets the number of decimal places in the answer. In the "F" position, the answer is displayed in the floating decimal system.

RIGHT SHIFT KEY

Operation of this key in entering numbers shifts the number one digit to the right together with a decimal point. Used for one digit correction of mis-entry.
Note: This key is effective only when entering numbers.

PRINT KEY

By depressing this key in the non-print mode, the displayed number is printed with symbol "P".

NON-ADD/SUB-TOTAL KEY

Non-Add — When pressed following an entry, prints the entered number on the left hand side of the tape with the symbol "#". This key has no calculation function.
Sub-Total — When pressed following a function key, prints the sub-total with the symbol "◇". This sub-total may be used for further calculations.

TOTAL KEY

Prints the total of addition and subtraction with the symbol "*". This key also serves as the clear key for the calculation registers and resets an error condition. The contents of the memory are not affected by use of the [*] key.

CLEAR ENTRY KEY

Clears a number which has been entered into the keyboard prior to use of a function key. The [CE] key is also used to clear an overflow error caused by an entry.

CHANGE SIGN KEY

Changes the algebraic sign of a number (i.e., positive to negative or negative to positive).

NUMERAL KEYS

Enters numbers into the calculator.
Note: The [000] key may not be available in some countries.

DECIMAL POINT KEY

Positions the decimal point in an entered number.

PLUS EQUALS KEY

The [±] key prints the entered number with a "+" symbol and adds the number to the contents of the calculation register. This key is also used to obtain the results in multiplication and division and prints the product/quotient with the symbol "*".

MINUS EQUALS KEY

The [--] key prints the entered number in red with a "−" symbol and subtracts the number from the contents of the calculation register. This key is also used to obtain the product/quotient in negative multiplication and division and prints it in red with the symbol "*".

ENGLISH

[×] **MULTIPLICATION KEY**
Prints the entered number with the symbol " × ", and orders multiplication.

[÷] **DIVISION KEY**
Prints the entered number with the symbol " ÷ " and orders division. When followed by the [±] key (i.e. [÷][±]), square root will be performed.

[%] **PERCENT KEY**
Permits entry and/or answers of actual percentages rather than their decimal equivalents. This key also performs several special percentage calculations automatically. (See pages 9 & 73)

[+I] **MEMORY PLUS KEY**
Adds an entry or an answer to the memory, and prints the number with the symbol " +I". This key also serves as the [±] key when accumulating products and/or quotients.

[−I] **MEMORY MINUS KEY**
Subtracts an entry or an answer from the memory and prints the number in red with the symbol " −I". This key also serves as the [−=] key when accumulating negative products and/or quotients.

[◇I] **SUB-TOTAL MEMORY KEY**
Sub-totals the contents of the memory and prints the number with the symbol " ◇I". The contents of the memory are not disturbed and may be used for further calculation.

[*I] **TOTAL MEMORY KEY**
Totals and clears the memory. The total is printed with the symbol " *I".
Press this key to clear the memory before starting a memory calculation.

[RE SET] **RESET KEY**
Clears the calculation registers.
(For use with specific applications, please refer to the cartridge reference manual.)

[A] ~ [J]
[SHIFT] **DEFINABLE KEYS**
Please refer to the cartridge reference manual.

LAMPS:

PROGRAM LAMP — Please refer to the cartridge reference manual.
MEMORY LAMP — Turns on when a number (other than zero) has been stored in the memory.
SHIFT LAMP — Please refer to the cartridge reference manual.
LAMPS FOR DEFINABLE KEYS — Please refer to the cartridge reference manual.

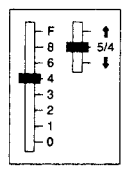
CAPACITY

1. A maximum of 14 digits may be entered in all functions, provided that the answer does not exceed 14 integers (whole numbers).
2. Entries for multiplication and division calculations may contain up to 13 decimal places.
3. Entries for addition and subtraction may contain only the number of decimals set on the decimal selector. Additional decimals entered will be ignored.

EXAMPLE Set the decimal selector at 2
Enter .123 [±]
Read 0.12

4. If an answer contains more than (14 - Preset Decimal) digits, the decimal point will shift to the right and the 14 most significant digits of the answer will be printed. This is called underflow. In the example below, when the answer contains more than 10 digits to the left of the decimal (14 − 4 = 10), the decimal point automatically shifts to the right to accommodate the most significant part of the answer.

EXAMPLE

Selector	Operation	Results
	1234567890.1234 [×] 1 [00] [±] [×] 1 [00] [±]	1,234,567,890.1234 × 100. = 123,456,789,012.34 * 123,456,789,012.34 × 100. = 12,345,678,901,234. *

NON-ADD PRINT

This key is used to print out numbers not subject to calculation such as code, date, etc.

EXAMPLE No. 123

Operation	Display	Print
123 [#/◇]	0.	# 123.

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ADD MODE

To activate the Add Mode, set the constant/add mode selector at A.
Use of the Add Mode permits addition and subtraction of numbers without entry of the decimal point. In this respect, the calculator will operate similarly to a 10-key adding machine.
When the Add Mode is activated, the decimal point is automatically positioned according to the decimal selector setting.

EXAMPLES Set the constant/add mode selector at A

A. Set the decimal selector at 2
Enter 123456 [±] Tape prints 1,234.56 +

B. Set the decimal selector at 4
Enter 123456 [±] Tape prints 12.3456 +

Use of the [•], [×], and [÷] keys will automatically override the Add Mode and decimally correct answers will be displayed at the preset decimal position.

EXAMPLES Set the constant/add mode selector at A and the rounding mode selector at 5/4.

A. Set the decimal selector at 2
Enter .1234 [×] Read 0.1234
1 [00] [±] Read 12.34

B. Set the decimal selector at 2
Enter 123 [±] Read 1.23
10 [•] [±] Read 11.23
[*] Read 11.23

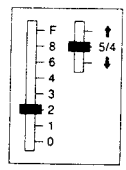
Note that decimal point was entered.

SPECIAL PERCENTAGE CALCULATIONS

The percent key [%] automatically converts percentages to their decimal equivalent, so that all answers will be decimally correct.

Sales Tax*

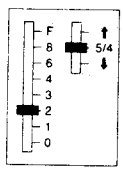
EXAMPLE $100 plus 5% sales tax

Selector	Operation	Print	
	1 [00] [×]	100.	×
	5 [%]	5.	%
		5.00	◇ amount tax
	[±]	5.00	+
		105.00	* net amount

* Note: The constant/add mode selector must be set at • or A.

Discount

EXAMPLE $100 less 10% discount

	1 [00] [×]	100.	×
	10 [%]	10.	%
		10.00	◇ amount discount
	[-=]	10.00	– (red)
		90.00	* net amount

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2 RIBBON REPLACEMENT

1. Remove the roll of paper tape from the calculator. (Tear the tape and remove the tape from the print mechanism by using the paper feed key.)
2. Turn off the power switch.
3. Remove the printer cover by sliding it towards the back of the machine.
4. To remove the used ribbon, press the levers towards the center and lift the reels.
5. To install the new ribbon, move the left lever to the far right.
6. With the black side of the ribbon facing upwards, place one of the reels on the reel shaft on the left. Make sure that the reel is securely in place.
7. Thread the ribbon around the outside of the metal guides. (See Fig. 2)
8. Move the right lever to the left and insert the right hand reel securely.
9. Take up any slack by manually turning one of the reels.
10. Replace the printer cover.
11. Replace the roll of paper tape.

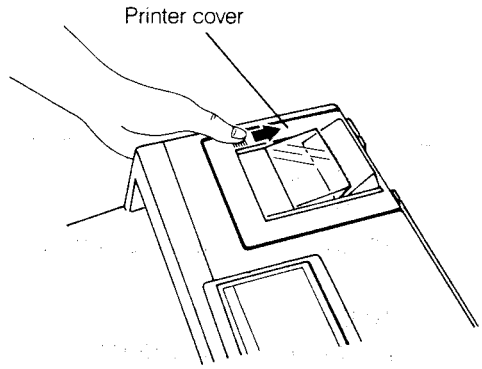


Fig. 1

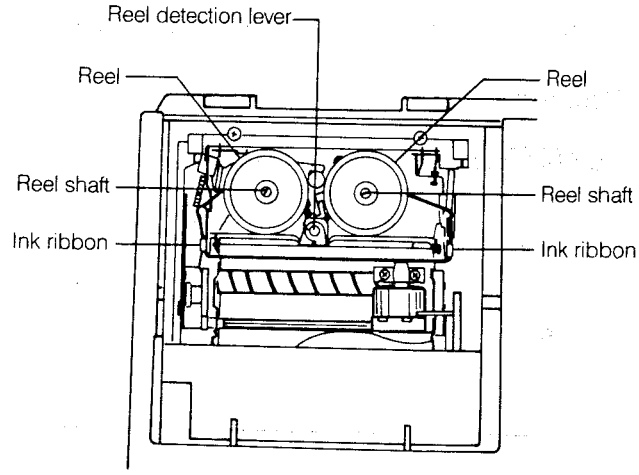


Fig. 2

Note: To eusure trouble-free operation, set the ink ribbon as shown in Fig. 3, not as shown in Fig. 4.

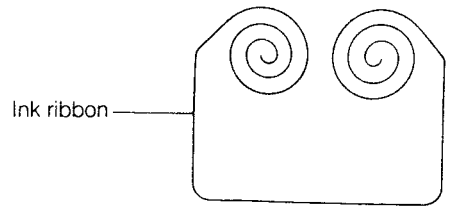


Fig. 3
Correct

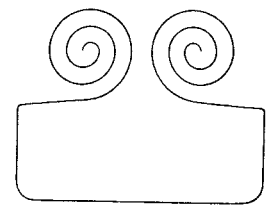


Fig. 4
Wrong

3 PAPER TAPE REPLACEMENT

1. Assemble the paper holder. (See Fig. 1)
2. Insert the leading edge of the paper directly into the opening behind the print mechanism. (See Fig. 2)
3. Press the paper feed key and feed the tape under the edge of the paper cutter. (See Fig. 3)
4. Place the new roll of tape in the holder at the back of the calculator. (See Fig. 4)

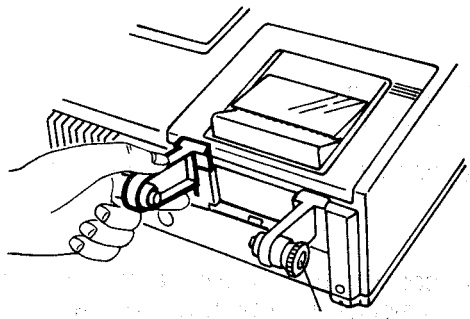


Fig. 1

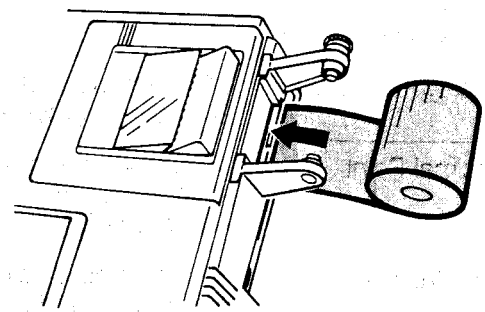
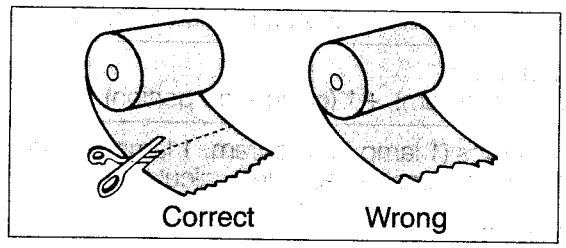


Fig. 2



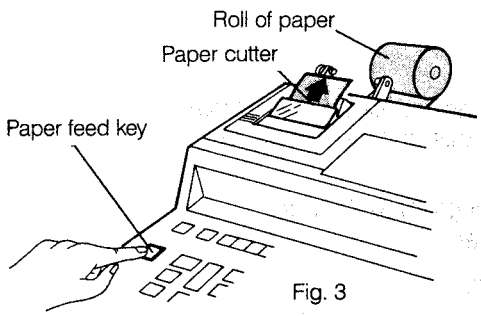


Fig. 3

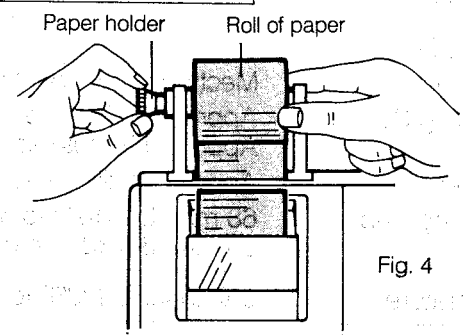


Fig. 4

4 ERRORS

There are several situations which will cause an overflow or error condition. When this occurs, the error symbol "*E*" will be displayed and all keys will electronically lock. The contents of the memory at the time of the error are retained.
If an "*E*" is printed on the tape at the time of the error, the [*] key or [RE SET] key must be used to clear the calculator. If an "*E*" is not printed on the tape, the error may be cleared with the [CE] or [➡] key and calculation continued.
The following will cause an overflow or error:

1. Entry of more than 14 digits or 13 decimals.
   This error can be cleared with the [CE] or [➡] keys.
2. When an answer exceeds 14 integers (whole numbers).
   An "*E*" will also be printed on the tape.
3. When any number is divided by zero. An "*E*" will be printed on the tape.

ENGLISH

5 SPECIFICATIONS

Type	Electronic alphanumeric printing/display calculator with interchangeable cartridges
Power Source	AC: Local voltage (including Ni-Cd battery)
Display	Light blue fluorescent dot matrix alphanumeric display
Operation Capacity	14 digits
Display/Print Capacity	With symbols and 3-digit punctuations 24 digits (display), 24 digits (printing)
Decimal Point	Automatic decimal point positioning by preset decimal selector (0-1-2-3-4-6-8-F) Add mode (A)
Calculations	Four arithmetic calculations, constant multiplication and division, power calculation, add-on/discount calculation, repeat addition and subtraction, square root calculation, reciprocal calculation, memory calculation, mixed calculation, program calculation, etc.
Memory Register	(Standard) 926 (program) +1 (calculation portion)
Lamp	13 lamps (1 lamp for program, 1 lamp for memory, 1 lamp for shift and 1 lamp for each specialized calculation.)
Components	LSI, etc.
Printing Section	
Printer:	Mechanical dot printer
Printing Speed:	Approx. 2.9 lines/sec. (12 digits continuous printing) Approx. 1.9 lines/sec. (24 digits continuous printing)
Paper Feed Speed:	Approx. 4.8 lines/sec.
Printing Paper:	68 mm (2-11/16″) to 69 mm (2-23/32″) wide 80 mm (3-5/32″) in diameter
Temperature	0°C to 40°C (32°F to 104°F)
Power Consumption	50.0 W
Dimensions	300(W) × 390(D) × 112(H) mm 11-3/4″ (W) × 15-11/32″(D) × 4-13/32″ (H)
Weight	4.1 kg (9.04 lbs.)
Accessories	1 roll of paper, 1 ink ribbon, dust cover, paper holder and operation manual